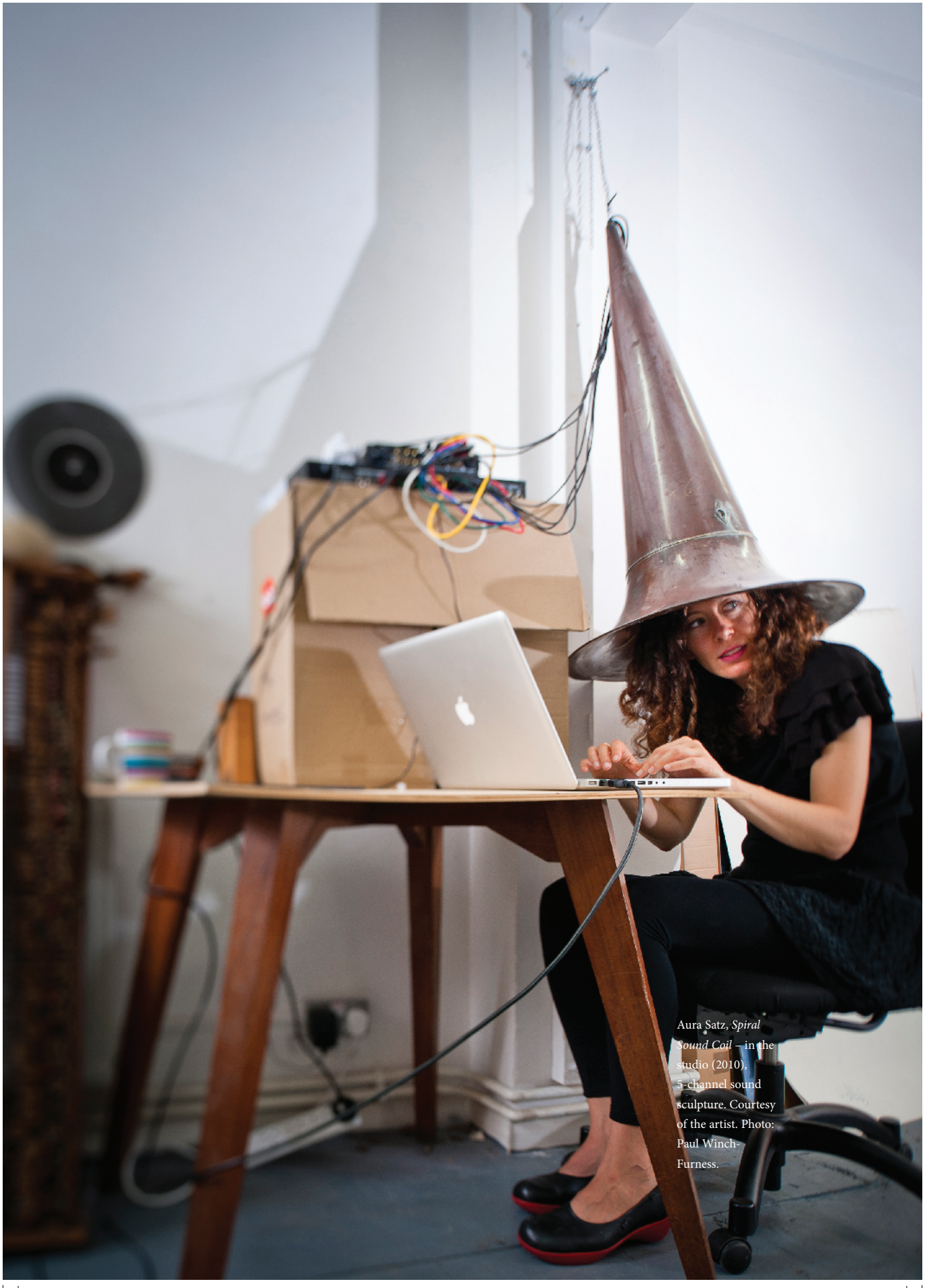

Aura Satz, *Spiral Sound Coil – in the studio* (2010), 5-channel sound sculpture. Courtesy of the artist. Photo: Paul Winch-Furness.

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INTERVIEW

Aura Satz in conversation with Christoph Cox, April/May 2017

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Introduction

Aura Satz is a film-maker and sound artist who has performed, exhibited and screened her work nationally and internationally, including at Tate Modern; Oberhausen Short Film Festival (Oberhausen); the Rotterdam Film Festival (Rotterdam); the New York Film Festival (NY); Gallery 44 (Toronto); InterCommunication Centre (Tokyo) and the Sydney Biennale. In 2012, she was shortlisted for the Samsung Art+ Award and the Jarman Award. She teaches at the Royal College of Art, London. She was in conversation with Christoph Cox, a philosopher, critic, and curator who teaches at Hampshire College in Amherst, Massachusetts. He is the author of *Sonic Flux: Sound, Art, and Metaphysics* (University of Chicago Press, forthcoming) and *Nietzsche: Naturalism and Interpretation* (University of California Press, 1999), and co-editor of *Realism Materialism Art* (Sternberg, 2015) and *Audio Culture: Readings in Modern Music* (Continuum, 2004/Bloomsbury, 2017). Cox is editor-at-large at *Cabinet* magazine. His writing has appeared in numerous journals including *October*, *Artforum*, *Journal of the History of Philosophy*, *Journal of Visual Culture*, *The Review of Metaphysics*. He has curated exhibitions at the Contemporary Arts Museum Houston, The Kitchen, CONTEXT Art Miami and other venues.

Aura Satz: We were first introduced some years ago by a mutual friend and we quickly discovered that we were thinking about many of the same things: sonification, synaesthesia, Chladni figures, Oskar Fischinger, and recent artistic ventures into this territory. Maybe we could open by talking about your philosophical ideas around sound, flux and event?

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Christoph Cox: *Sonix Flux* […] came out of an effort to think philosophically about sound art. Philosophers have thought about music for millennia; but it seemed to me that sound art poses perhaps even deeper questions about the nature of sound. It also seemed to me that thinking about sound could unsettle a number of ordinary and philosophical assumptions. For example, we tend to think (and speak) of the world as consisting of subjects or objects that then undergo changes. Sound encourages us to reverse this common idea and instead to take change, flow, and process as primary and to conceive things, beings, and objects as temporary concretions of these processes. Things become events. A lot of the book is an effort to think through how key works of sound art – for example, by Maryanne Amacher, Chris Kubick and Anne Walsh, Max Neuhaus or Christian Marclay – reconfigure our conceptions of being, time, matter, etc. In the last chapter of the book, I consider the history of experimental cinema, looking at the ways that film-makers and artists have unsettled 'common sense', that is, the ordinary hierarchy and synchronisation of the senses. I've been very interested in the way your work deals with these issues, Aura. How did relationships between sound and image became a prominent through line in your work?

AS: For a while now I've been making works that relate to the trope of ventriloquism, the idea of one body inside another, acting as a kind of conduit or medium or host. It began with a piece I made called *Ventriloqua* (2003), performed when I was pregnant. I thought of it not in the negative sense of being possessed or invaded, but rather I was interested in exploring what it might mean to contain another voice. I had been exploring voice embodiment and disembodiment, the notion of a split body, detaching sound from its source and putting it into other bodies. I made a series of films investigating this through looking at technologies of sound reproduction and acoustics, from the perforated paper of pianolas and pricked barrels of mechanical music, through to Chladni figures, Rueben's tubes (both devices which enable the visualisation of sound as geometric patterns in sand or as a standing wave of flames) and optical sound on film. All of these articulate a certain causal or indexical audiovisual link, a supposed perfect fit. But through making the works I realised what I was interested in wasn't so much a perfect sound-image, but rather a way of remapping sound onto image and vice versa. Prising apart sound and image allows for new readings, new correspondences between the two. Some of these audio-visual technologies, in fact, defamiliarise how we look and how we listen, even when they are supposedly a 'good', synchronised fit. For example, some of the acoustic devices mentioned above respond more acutely to certain frequencies, visually amplifying what would otherwise be inaudible or on the threshold of audibility. I became more and more invested in ways of disrupting the synchronicity of sound and image, forcing the eye and the ear to work harder to interlock seamlessly.

CC: It is fascinating to think of sound and image as two different bodies: a sonic body and a visual body, and the two of them inhabiting each another. That's a wild and rich way of conceiving that relationship, and very different from the way it was conceived in the history of

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cinema, where sound and image were thought of in terms of a split that needed to be healed, a divide that needed to be brought together. In everyday perception sound and image are not detached or severed. But early silent cinema separated the two; and then sound-film was seen (by some) as a sort of restitution of the natural order.

AS: Yes, these inaugural technological moments are marked by rifts. Phonography separates sound from its source, film divides body from its image, and later, as they are reconnected, aligned, synchronised in a 'married' print, to use a technical term, you encounter a series of potentially productive ruptures and glitches. In analogue or photochemical film, the soundtrack is always offset in relation to the image, out of sync by 21 frames as the lens and the photosensor are not adjacent. When I first started looking at technologies of sound I was interested in ways of visually encoding music, methods of notation that become the indexical trace of sound. This led to an exploration of the history of early cinema, the rhythmic films of Viking Eggeling, Hans Richter and Oskar Fischinger to the more explicit sound-writing animations of Norman McLaren, or the optical sound films of Lis Rhodes. In remapping sound and image I am also focusing on a semiotic shift, moving from script to score to trace, from the symbolic to the indexical. For example in *Automamusic* (2010) I looked at pianola scores and pricked barrels, whereas *Onomatopoeic Alphabet* (2011), *Vocal Flame* (2012) and *In and Out of Synch* (2012, in collaboration with Lis Rhodes) have all featured acoustic devices that are indexical manifestations or traces of sound. Certain technologies prompt paradigm shifts, such as the sound vibrations mechanically etched onto a cylinder or record in phonography, which profoundly transformed our understanding of automatic writing, decipherability, touch, trace, and as such induces a retuning of the senses. Writing is no longer attached to the human hand, nor does it need a human eye to be read or voice to be brought back into speech. Sound and image need to be continually recalibrated, as they both interweave and work up against each other. We talked some time ago about how you were against synaesthetic interpretations of sound and image. Can you say a bit more about this?

CC: In the chapter about cinema mentioned earlier, I lay out a critique of synaesthetics, by which I mean the appropriation of the neurological condition of synaesthesia by artists, critics, and curators as a way to think the relationship between sound and image. My initial interest in this stemmed from a series of exhibitions that took place around 2005-06, exhibitions such as *Sons et Lumières* at the Pompidou and *Visual Music* at the Hirschhorn and MOCA, LA that focused on 'visual music'. On the one hand, these exhibitions were evidence of a new interest in sound by visual arts curators and institutions. On the other hand, it seemed that sound could only be presented in such institutions when it was chaperoned by the visual, that it needed a visual component to justify its presence in the gallery. So the only way to introduce sound to these spaces was under the authority of the visual. This led me back to cinema and the historical relationships between sound and image. It struck me that

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in many efforts to visualise music, there was a taming of sound, a worry that sound couldn't stand on its own, that it required the image to make it whole. I became interested in the very vexed relationships between sound and image in early modernism, for instance in the silent films of Richter and Eggeling that attempted visually to capture musical capacities such as rhythm and volume. Of course all this goes back further to Kandinsky and Klee, who used music as an inspiration and justification for the production of abstract visual art. It's not that I dislike this material; not at all. I was just interested in what was actually going on with sound in these contexts, how it was being employed and deployed for the benefit of the image. And like you, I came to be interested in those films where that relationship was either more direct and indexical (such as in the work of Lis Rhodes), or where sound and image were pulled apart, out of sync – as in Bruce Nauman's famous video *Lip Sync* (1969) and Mike Dunford's wonderful film *SYNC.SND.* (1974). More recently I've been interested in films that put sound and image on equal terms, conceiving that relationship in ways that are rich and complex, for example in the work of Manon de Boer, Luke Fowler, and the Sensory Ethnography Lab. In his film trilogy *A Grammar for Listening* (2009), for example, Fowler closely collaborated with three sound artists, attempting to match his camera and editing style to that of his sound artist collaborators Lee Patterson, Eric LaCasa and Toshiya Tsunoda. The result is three very different and beautiful films.

AS: I feel very much aligned with those film-makers you mention, especially de Boer (cf. her film about percussionist Robyn Schulkowsky, *Think about Wood, Think about Metal*, 2011). I like to think of my work as a conversation, not quite documentary but a dialogic relationship to its subject. For me the notion of a conversation opens up to the idea of another voice alongside my own. Even when I've made films about things, not people, it's a conversation across time. I like the idea of being out of sync with one's own time. My film *Oramics: Atlantis Anew* (2011) about Daphne Oram partly looks back at a historical archive and object, but it's also about her thinking forward ahead of her time, imagining future sound worlds. Oram (1925–2003) was a pioneer of British Electronic Music and co-founder of the BBC Radiophonic workshop, and the film features a close-up encounter with her invention, the Oramics Machine, which used drawn sound principles to compose 'handwrought' electronic music. Often the kind of images or sounds I am drawn to engage with distant voices, speaking both forwards and backwards through time. We can conceive of the notion of synchronicity not just in relation to sound and image, but through time, science-fiction utopian or dystopian imaginings of a time that is not the here and now.

For me all of this hinges on the concept of attention. How do we pay attention, to the present, to the past, to otherness? Sound and image are strategies of directing or diffracting attention, enabling the viewer to enter a certain perceptual state, but by introducing a lag or syncopation or pre-emptive patterning, something else comes into being. In my work I am using attention both as a subject matter and as a formal method or set of possible instructions. I pay attention to historical figures who have been overlooked or haven't

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been properly acknowledged (such as Oram, Natalie Kalmus, Hedy Lamarr, Henrietta Swan Leavitt, the ENIAC programmers, to name a few), but also try to induce certain perceptual states of attention, to facilitate a particular way of looking or listening, a heightened awareness of patterns in formation, the discovery/articulation of unknown or newly-formed codes and languages, and unexpected juxtapositions between modes of sensory apprehension. It's a small and modest gesture but to me it's also about making something appear and be heard.

CC: I definitely want to talk more about attention. But, briefly, given your interests in ventriloquism and summoning the past, are you interested in the historical relationship between the origins of audio-recording and spiritualism, in the way that audio recording was conceived as a means of communicating with the dead?

AS: Yes, definitely. Many works have a loose association with ideas that could correlate to spiritualism – the possibility of experiencing mediumship, using 'ventriloquism' or indirect speech to articulate concerns that couldn't have emerged otherwise (such as abolitionism or women's rights) – the idea of not necessarily owning your voice, but instead being spoken through. That said I'm not interested in positioning the work as a judgement, an act of debunking or proving truth. These technologies and techniques of the body enable a way of articulating voice that otherwise wouldn't have been available. The rise of spiritualism coincides with and appropriates the technologies of those times, technologies of prising apart sound and image (telegraphy, phonography, radio, telephony, etc.). Somehow the disembodied voice tends to connote a murky territory between science fiction and horror films, synthetic sounds apparently made from nothing, technologically mediated sounds that blur bodily boundaries and are un-locatable. Perhaps ultimately this comes from an anxiety around asynchronicity, that certain voices precede or exceed us, beyond our control.

Continuing along this line of enquiry around hidden voices, sound overlay or palimpsest, sound extinction and rescue, maybe this is a good time to move from discussing the disembodied voice to considering sound embodiment, landscape and field recordings, taking the recording apparatus out to find sound-making bodies/things in the world. How might we connect this to ideas of the Anthropocene?

CC: If you think back to the late 1960s-early 1970s, theorists such as R. Murray Schafer were really thinking about the relationship of sound to what eventually came to be called 'the Anthropocene'.[1] Schafer and his colleagues at the World Soundscape Project conceived the world as a macrocosmic sound composition, a continual flow of sound that is collectively created by all sorts of animate and inanimate forces. Schafer was concerned with the fact that, particularly since the late nineteenth century, human beings have played an outsized role in contributing to this soundscape. So the project of Acoustic Ecology became to think about how humans might modulate their contributions and to think of these contributions

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compositionally. For him it was a question of value – not only aesthetic but also ethical value, drawing attention to the negative impact of anthropogenic noise on human and animal well-being Other soundscape composers, notably Francisco López, reject this sonic moralism and instead celebrate noise of all sorts; but I think you hear resonances of Schafer's position in the work of artists such as Chris Watson, Jana Winderen, and Lee Patterson who, like Lopez, are fascinated by the entire world of sound but also share some of Schafer's conservationist aims and ecological sensibility. From the 1970s through the 1990s, field recording was a kind of niche activity that was often more documentary than aesthetic. Over the last ten years or so, just as issues of climate change and the Anthropocene have become central political issues, field recording has burst back on the scene through experimental music labels such as Touch and Gruenrekorder. What happens when human noises become the dominant noises we hear? How do these relate to the sounds made by other species? I think about artists such as Winderen and Patterson who focus on the tiniest, almost inaudible sounds of nature.[2] To me, this connects back to your interest in economies of attention.

AS: Yes, again, recording technologies enable a certain kind of listening, a new kind of attention. Tape technology brings on *musique concrète*, the microphone enables amplification and attention to small sounds. All these technologies prosthetically amplify our sensory bodies, but also, and to me more importantly, they recalibrate the way in which we pay attention. You talked earlier of the Anthropocene occluding the small sounds of nature; it is as if we are drowning out the soundscape with our noise pollution. This is very real, but I hope it brings with it a counter-movement, a call to a certain mode of ethical attention, respect, a tenuous holding precious, the possibility of tendering response-ability to the barely audible.

CC: I think the 'sonic turn' in culture does exactly this: it turns our attention to all sorts of micro and macro sounds that have been there all along but to which we were not paying attention.

AS: I am reminded of a recent film, Nikolaus Geyrhalter's *Homo Sapiens* (2016), which features a sequence of post-apocalyptic ruins – abandoned amusement parks, decommissioned reactors, relics of wars, libraries, abattoirs – but crucially the film is free of voice-over and music, resonating only with the ambient sounds of what is left after human activity on the site has ceased: the amplified soundscape of hollow architectural shells, rustling plastic, creaking windows, rain, buzzing flies, and the fluttering and cooing of birds. It's extremely effective in highlighting our fragility and inevitable decline, but also the eerie indifference of nature. The sound is so powerful in drawing attention to and amplifying neglect.

CC: I haven't yet seen that film; but I recently read a great essay by Joanna Zylinska on 'ruin porn' that asks the question: what might it mean to picture a world after human extinction?[3] For me this connects with a range of philosophical issues raised by speculative realism, particularly the issue of how human thought might think beyond

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the human, as natural science does when it describes the universe as it existed before (and will surely exist after) human beings.[4] It also connects with a persistent interest of sound artists in sonic flows that precede and exceed the human.

AS: Until recently, I have been deeply invested in this idea of attention to the unheard or lesser heard, but my new project on sirens as a sound at the threshold of obedience and disobedience (still in development), is perhaps situated at the other end of the spectrum – how do we vie for sonic attention? Loud noise is one method, as are sounds that go through a range of pitches. But what if one were to start from scratch and try to apply a compositional approach to a sound that calls for attention, rather than a sound that we have inherited, how would we re-conceptualise a sound that needs to be ever more attention-grabbing in this noisy soundscape? How can we re-calibrate the sounds that call to attention without necessarily tapping into a sense of tense hypervigilance or anxious sensory apprehension? In all the films I have made around technology, I tend to film close-ups of calibration devices, using this as a way to explore how we map and remap the senses, how we modulate and fine-tune measurements (cf. *In and Out of Synch*, which features the optical sound recorder calibration window, or *Doorway for Natalie Kalmus* [2014], which explored the inside of a 35mm additive colour lamphouse used for colour correction). If we look to the definition of attention, it comes from the word 'attend', to tend towards a person, a place or an object. When you spoke earlier about ethics, that is very much how I think of attention, as a tending towards, the cultivation of ethics. I realise this is perhaps quite narrow, which is why I am also trying to engage with other kinds of attention economies, such as distraction and its opposite: panic, fight or flight mode.

CC: The phrase 'economies of attention' is generally used in relationship to advertising and commerce; but I also think it relates to the space between music and sound art, and the shift we have seen from music to sound. This shift goes back to Edison, a key antecedent to sound art insofar as his phonograph enabled the registration of sound as something that is not necessarily musical. As Friedrich Kittler points out, the recording apparatus has a different kind of attention than we humans generally have. It doesn't filter out noise in order to focus on 'articulate' or 'significant' sounds such as voices or music. Rather, it registers all sound indiscriminately.[5]

AS: Yes, exactly. In *Dial Tone Drone* (2014), a piece for telephone I made in dialogues with Pauline Oliveros and Laurie Spiegel, Pauline says:

> from the time we're born, we're optimised for speech, so that our attention is focused toward learning to communicate […] there's another kind of attention, which is what I call global or inclusive attention, where you include as much sound as you can, and understand the field of sound, and understand place or environment or where you are while you're maybe busy communicating.

Small sounds, incidental sounds, surface noises, unintentional sounds open up to new entanglements, and technology can help us

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inhabit the indistinct space between noise and signal. If we think around this idea of attention as a tending to, we can frame it as exploratory yielding, probing, leaning in, amplifying attention but also allowing for the meanderings of attention into unexpected unintentional experiences. There is something about the friction between sound and image in film that can accentuate a tuning in – you forge a new audio-visual register, a different kind of looking-listening. I am very much committed to the mindset of responsively questioning and attuning to what comes our way, and filmic practices are one way of enacting this.

CC: We talked earlier about how sound is generally subservient to image. But as you say, there are some examples in which the mismatch between sound and image creates a friction. Sound need not only serve a suturing function; it can also disjoin.

AS: I agree, that is beautifully phrased. I feel like that is much more worth pursuing than the idea of a holistic rapport between sound and image.

CC: You mentioned your fantastic piece *Dial Tone Drone*, a sort of experimental audio documentary with Pauline Oliveros and Laurie Spiegel. That piece managed to link the drone (a pervasive feature of minimalist music and contemporary sound art) with technologies of communication and modes of attention. I am totally fascinated with drones, sonic drones, that is, not so much the aerial kind! What interests you in them?

AS: I have always loved the immersive audio environment created by sustained notes, the way they immediately generate a sonic field with micro-variations that the listener can 'tune' into. There are a number of reasons drones appeal to me, the first being the psychoacoustic effect generated through the absence of an obvious rhythmic temporality and a lack of change. The brain therefore starts to break it down into more digestible chunks and imagine all kinds of subtle micro-changes. It is a sound experience that highlights the perceptual encounter, and in my experience draws particular awareness to a complex threshold between listening and hearing, to follow Pauline Oliveros's distinction.[6] Tony Conrad has written about his drone music as anti-authoritarian and anti-compositional, moving away from the primacy of the score to listening and working 'on' the sound from 'inside' the sound – helping 'it to coalesce and grow around us'.[7] The drone removes the investment in progression, narrative or climax, conveying instead suspension, resilience and resolution. I like this idea of a sound continuum that you can adjust or tune to, lose yourself in. When I first conceived of *Dial Tone Drone*, a sound work commissioned for the original prototype of the red phone booth by dialling a telephone number and listening to the earpiece. I was looking to articulate how the female telephone operator was replaced by the dial tone. There was an almost seamless transition from women as speech weavers and voice connectors, plugging the lines of communication in early telephony, to the automated sound signal of the electronic tone that essentially

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communicates that the line is open and connected, like a sonic thread, ready for conversation. I was curious to tease out overlaps between this open sound signal and the compositional practices of women working with sustained notes. Pauline and Laurie's music was mixed to merge the sonic qualities of dial tones, voice, accordion, and intricate electronic sound patterns, whilst elements of various conversations were recomposed to both orchestrate and annotate states of sonic reception. Laurie had been artist in residence at the Bell telephone labs, and Pauline had made several telematic, telephonic and skype performances.[8]

CC: Over the past few years, I have been completely immersed in drones as well. It is significant, I think, that many of the seminal works of sound art – La Monte Young's *Dream House* (1969), Alvin Lucier's *I Am Sitting in a Room* (1970) and Max Neuhaus's *Times Square* (1977) – are rooted in the drone, as are so many important sound art pieces since (Francisco Lopez's work, Christina Kubisch's *Electrical Walks* (2003), Toshiya Tsunoda's work, etc.). We can go back further and consider Cage's *4'33"* (1952) as fundamentally a drone piece, focused on the perennial flow of background noise. All these pieces – and so many musical pieces based on the drone: Pauline's work, the work of Éliane Radigue, and others – gesture toward that sonic flux that precedes and exceeds human contributions. They attune us to a kind of cosmic sound or noise. Right around the time that Cage was writing *4'33'*, he wrote a series of pieces for radio. And it seems to me that these things are connected. A radio tunes into or downloads waves and signals that surround us but that otherwise go unheard. Likewise, *4'33'* enables us – for a period of time – to tune into background noise. As Doug Kahn points out, radio is not simply a technical invention but a natural phenomenon: lightning-generated electromagnetic waves bounce around the ionosphere and have done so probably for billions of years, long before humans learned to tune in.[9] In the late 1960s, Pauline and Alvin Lucier were fascinated with these 'atmospherics' or 'sferics', which more recently have captivated the Australian artist Joyce Hinterding.

AS: This takes me back to the idea of attentive listening as key to counteract our indifference to nature, and the necessary modulation of our way of being in the world to mitigate our impact on the environment as a kind of tuning. In many ways this connects to my current project on sirens, which I am also thinking about compositionally, by which I mean as a sound that is most familiar as a given signal (dial tone or alarm) but which can be reconfigured and rewired to open up how we think of these sonic formulae. Generally speaking, with the dial tone we are receptive and attuned to communication, whereas when we hear a siren we become tense and vigilant, and have an almost magnet-like deflection response, moving aside to avert becoming an obstacle, running away to avoid being caught, or waiting to be removed from danger, saved, etc. These sounds operate somewhere between signal and invisible background noise (if not triggered by or directed at you), something that engenders an automated knee-jerk, learned response, particularly in dense urban environments; but if you undo these habitual responses and

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think of siren sounds as something you can compose, or compose with, you open up to a different tuning of attention and subsequent reaction. I am suggesting reframing sounds that are pre-emptive prompts for compliant actions, as a way of recalibrating that experience of obedience to something slightly different – I imagine there are many different forms of non-compliance, immersive reverie being one of them.

CC: It is interesting to me that, just after Max Neuhaus installed his key drone installation *Times Square* – a continuous sound broadcast from a subway vent in New York City's busiest district – he began a decade-long project to redesign sirens for emergency vehicles in the city. Between these two projects, there's a relationship of ground and figure. *Times Square* aims to blend into the ambient noise of the city, while the siren project aims to cut through this background. What is more, Neuhaus discovered that the most effective sirens involved spaced bursts. So between *Times Square* and the siren project, you have the two key forms of minimalist music: the drone and the pulse! Neuhaus discovered that what we know as the sound of a siren (loud, abrasive ascending and descending glissandi) was simply the contingent product of very basic turn-of-the-twentieth-century technology: cranks and pedals that produced rising and falling sounds. (Luigi Russolo, Edgard Varèse, and other composers were captivated with these sounds, which they took to be the signature sounds of the modern city.) When electronic versions became possible decades later, they simply mimicked the old siren sounds – which, it turns out, are dangerously ineffective because they are both alarming and non-directional (where is the fire?), creating general panic and distress without any clear focus. Neuhaus worked for years to design sounds that could cut through the noise of the city, giving drivers and pedestrians clear information about the speed and direction of emergency vehicles. But he couldn't sell it to the city's police and fire chiefs, who seemed to like the power and authority projected by the old-fashioned sirens. Neuhaus acknowledged that perhaps his sounds were a bit too pretty – which makes me really want to hear them![10] All this brings to mind the original sirens: those alluring female sea creatures of Greek mythology whose song was said to be sweet and transfixing but deadly – 'round them heaps of corpses', Homer says.[11] Does gender play a role in your interest in sirens?

AS: I'm still developing this piece so it is hard to say just yet. But I was initially drawn to this sound through my use of glissandi in other works featuring the theremin, the musical saw, and test tone records, several of which were closely aligned with my work on women and electronic music. I first worked with the psychoacoustic illusion of an endlessly rising and falling Shepard scale, which created a very embodied listening experience across an axis of verticality. All of these sounds also had a subtle anthropomorphic quality so that they almost sounded like a human voice, and in fact *Glissolalia* (2008) ended with a female Barbershop Quartet where the voices were so tightly tuned that you hear them entwined inside each another.

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To return to Neuhaus, his work on the siren has indeed been a strong point of reference to me, as is the idea of re-composition. To me a sound that incorporates its own windup and wind-down reveals its own heaving energy, its unstable pulse. It feels relentless and vectorial, and yet it is full of quivering yelps. In thinking about the siren I have been trying to unpack the space between a wail and a warning, the affective tone of something signalling impending danger but also mourning the past, whilst also marking out a sonic threshold of obedience and disobedience.

CC: That certainly connects to Homer's sirens: female figures who portend death but also entice Odysseus and his troops to wallow in their past glories.

AS: Yes, there is something around the siren that hovers on the temporal threshold in a very curious way, a vector between future warning and past trauma. Maybe I'm biased but to me even the lowest range of the siren sounds feminine or animal, but not male – and this really haunts me – I find it unsettling that the female/animal register somehow is aligned with these sounds that are at once warning and mourning.

CC: The poet and classicist Anne Carson points out that sound is crucial to how we think of gender and human beings in general – that, since antiquity, the female voice has been aligned with the animal and the irrational, enabling men to banish women from politics and official culture.[12] Maybe this project on sirens contributes to investigating that relationship.

AS: In my films and sound projects around women I tend to focus on moments of invention, discovery, paradigm shift. I have addressed the female voice as connected to notions of authorship, writing, encrypting, coding, the ability to generate electronic sounds from nothing, instantiating a new vocabulary of sound and thereby modifying the associated ways of listening. These instances of interference or change can alter the prevailing worldview. Likewise in this future project on the siren sound, I feel it is important to invest this sound with a different capacity, one that makes noise worthy of attention; that makes us question inherited obedience patterns; and that is always a disruptive marker of unknown narratives.

CC: To read history differently, to listen differently, to pay attention differently.

AS: Exactly.

Notes

1. Schafer's classic text is *The Tuning of the World* (1977), rpt. as *The Soundscape: Our Sonic Environment and the Tuning of the World* (1994), Rochester, VT: Destiny. See also his essay 'The Music of the Environment', in *Audio Culture: Readings in Modern Music* (2017), rev. ed., London: Bloomsbury, pp. 31–41.

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2. Projects by Winderen, Watson, Jacob Kirkegaard and others can be heard on TouchRadio (http://touchradio.org.uk), a collaboration with the British Library.

3. Joanna Zylinska (2016), 'Photography After the Human', *Photographies*, 9:2, pp. 167–86.

4. See, for example, Quentin Meillassoux (2008), *After Finitude: An Essay on the Necessity of Contingency* (2008), Ray Brassier (trans.), London: Continuum and Ray Brassier (2007), *Nihil Unbound: Enlightenment and Extinction*, Basingstoke: Palgrave Macmillan.

5. Friedrich Kittler (1999), *Gramophone, Film, Typewriter*, Geoffrey Winthrop-Young and Michael Wutz (trans.), Stanford: Stanford University Press.

6. Pauline Oliveros (2011), *Deep Listening Institute*, Deep Listening Institute. Available online: http://deeplistening.org/site/content/about. Accessed 12 June 2017.

7. Tony Conrad (1996), *Early Minimalism*, vol. 1, CD booklet notes, pp. 19–20, rpt. in *Audio Culture*, p. 452.

8. Laurie Spiegel's LP *The Expanding Universe (1973–8)* features music created at Bell Telephone Labs during the 1970s. Pauline Oliveros used video telephone technology to make musical connections with long-distance partners in the 1990s, and *Deep Listening Convergence* (2007) involved 45 musicians in 'virtual residency' using Skype.

9. Douglas Kahn (2013), *Earth Sound Earth Signal: Energies and Earth Magnitude in the Arts*, Oakland, CA: University of California Press.

10. See Max Neuhaus, *Sirens*. Available online: http://www.max-neuhaus.info/soundworks/vectors/invention/sirens/Sirens.pdf. Accessed 28 May 2017.

11. Homer ([8th century bc] 1996), *The Odyssey*, Robert Fagles (trans.), New York: Penguin, p. 273 (Book XII, line 51).

12. See Anne Carson (1995), 'The Gender of Sound', *Glass, Irony, and God*, New York: New Directions, rpt. in *Audio Culture*, pp. 43–59.

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